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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY-DOCKET NO.	CONFIRMATION NO.
09/625,345	07/25/2000	Paul Timothy Spivey	LE9-00-022	7549

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LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

EXAMINER

TRAN, LY T

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/625,345

Applicant(s)

SPIVEY ET AL.

Examiner

Ly T TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-15, 17 and 19-24 is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17. 6) ☐ Other: _____

DETAILED ACTION

1. Examiner applied the new prior art to reject the claim 5 and, therefore, the finality of that action is withdrawn.

Allowable Subject Matter

2. Allowable subject matter of claim 5 has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (Fig.1A-Fig.2B).

Prior Art discloses an ink jet print head comprising:

- A heater chip (Fig.2A: element 22);
- A substrate associated with the back side of the heater chip, the substrate having a substantially flat surface (Fig.2A: element 20);
- The heater chip is being glue to the substrate (Fig.2A, 2B: element 18 is an adhesive);
- The heater chip includes a plurality of ink vias (Fig.1b: element 12), the adhesive being configured for preventing fluid communication between plurality if ink vias.

However, Prior Art fails to teach the heater chip having a cavity and adhesive at least disposed within the at least one cavity and cavity comprises at least one trench.

Wang et al. teaches the heater chip with at least one cavity (Fig.2: element 108) and adhesive at least disposed within the at least one groove (Column 2: line 28-33) to prevent clogging the ink slot.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching Prior Art to have the groove/cavity on the heater chip as taught by Wang et al. The motivation of doing so is to prevent clogging the ink slot.

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art in view of Wang et al. (USPN 6,209,993) as applied to claim 5 above, further in view of Brandon et al. (USPN 5,751,324).

Wang teaches that the heater chip includes at least one outside edge (Fig. 2).

However, The combination of Prior Art and Wang et al fails to teach at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing.

Brandon et al. teaches at least one trench (Fig.4: element 44+46) extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing (Column 2: line 61-63).

While Brandon does not teach providing the trenches in a heater chip, it does provide the general teaching to one of ordinary skill in the art of providing trenches

extending to at least one outside edge at a bonding site for the purpose of allowing the adhesive to outgas during curing.

It would have been obvious to one having skill in the art at the time the invention was made to modify the teaching of Sato and Harvey to have at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing as taught by Brandon et al. The motivation of doing so is the gas produced during of the adhesive is vented to the outside ambient environment.

Allowable Subject Matter

4. Claims 8-15, 17, 19 and 20-24 are allowed.

- The primary reason for the allowance of claim 8 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely disposed within at least one cavity, the adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.
- The primary reason for the allowance of claims 9-14 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely contained within at least one cavity, the adhesive adhering the backside of the heater chip to the substrate. It is limitation found in each claims, as it is

claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

- The primary reason for the allowance of claims 15, 17, and 19-21 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via, each of the at least one cavity surrounding a corresponding one of the plurality of via and at least one cavity being configured to reduce a width of a bond line between adjacent via of the plurality of vias. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.
- The primary reason for the allowance of claims 22-24 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via and a plurality of trenches, each via of the plurality of vias surrounding by a corresponding trench of the plurality of trenches and adhesive substantially entirely contained within each of the plurality of trenches, adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate and the adhesive sealing to completely prevent a flow of ink between the plurality of vias. It is limitation found in each claims, as it is claimed in the

combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 703-308-4896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.



November 19, 2003



Stephen D. Meier
Primary Examiner